

**BY ORDER OF THE COMMANDER
HILL AIR FORCE BASE (AFMC)**

**HILL AFB INSTRUCTION 21-301
2 JULY 2001**



Maintenance

TECHNICAL ORDER SYSTEM

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This instruction implements AFPD 21-3, *Technical Orders*, and AFMCI 21-110, *Depot Maintenance Technical Data and Work Control Documents*. It defines responsibilities and establishes procedures for the requisition, control, maintenance, and use of Technical Orders (TO) within depot maintenance production. This publication applies to all depot maintenance organizations at Ogden Air Logistics Center (OO-ALC) who acquire, manage, or use TOs. Maintain and dispose of records created as a result of prescribed processes in accordance with AFMAN 37-139, *Records Disposition Schedule*. See Attachment 1 for Glossary of References and Supporting Information. The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force.

SUMMARY OF REVISIONS

This publication has been completely revised. This revision has been expanded to provide instructions pertaining to the maintenance and evaluation of TO files, policy on TO extracts and processing procedures for AFMC Form 202, *Nonconforming Technical Assistance Request and Reply*.

1. GENERAL POLICY. Technical data that is used for depot maintenance is approved and published through a single manager engineering function and includes TOs, time compliance technical orders (TCTO), job guides, commercial manuals, engineering drawings and instructional blue prints.

1.1. Approved technical data is the only authorized source of information used to perform depot maintenance.

1.2. All manuals used as TOs must have a TO number assigned. Only verified TOs, as authorized in TO 00-5-1 and TO 00-5-18, *USAF Technical Order Numbering System*, shall be used for depot maintenance.

1.3. Specific TOs take precedence over general TOs.

1.4. Conditions under which TO compliance may be waived are outlined in TO 00-5-1, AFMC 21-301, *Air Force Materiel Command Technical Order System Implementing Policies* and AFMCMAN 21-1, *Air Force Materiel Command Technical Order System Procedures*.

1.5. The most current version of the technical data will always be used. Locally printed or database generated TO extracts may only be used for thirty calendar days from the date of printing.

1.6. In accordance with Air Force TO 00-5.2, paragraph 1-1.4.4, "To facilitate configuration control, all locally printed copies of TO extracts will be stamped with the reproduction date, parent TO date and change number." Prior to generating TO extracts, each organization shall establish and maintain internal controls to ensure this policy is met.

2. TYPES OF TECHNICAL DATA. TOs, engineering drawings, AFMC Forms 202, *Process Orders*, and abbreviated TOs are the only authorized forms of technical data. The type of technical data required for use by the mechanic/technician is identified on a work control document.

3. POSTING TECHNICAL DATA CHANGES. Changes to TOs will be monitored and documented. The unit's TO Distribution Office (TODO) is responsible for posting changes to assigned technical data. TODOs will publish and provide a list of changes to using organizations as these changes may affect a work control document. The using directorates will in turn review the published changes and update appropriate work control document.

3.1. Changes will always contain a new title page with a list of effective pages ("A" page). This "A" page usually gives the date of issue for the original and changed pages. The "A" page also tells what has happened to each specific page in the TO by specific number.

3.2. The number zero (0) is used for the original issue, basic or revision of a page or group of pages. The numbers one (1), two (2), three (3), etc., refer to the sequence of changed pages. The words "deleted", "added", or "blank" are shown along side the affected pages.

3.3. All replaced pages must be removed from the TO and destroyed.

3.4. If a change contains additional material that cannot be fully included on a single replacement page, additional pages are issued and inserted.

3.5. Errors noted in technical material improvements and corrections to TO deficiencies will be reported on an AFTO Form 22, ***Technical Manual (TM) Change Recommendation and Reply***, through user's supervisor, to the applicable TO office of primary responsibility.

4. TECHNICAL MATERIAL REQUISITIONING. Requirements for technical material are defined as new, changed, or canceled. TOs may be requested only when currently listed in TO indexes with a publication date or the words "NOT DATED" or when official distribution is known to have been made. Requisitions may be submitted for individual TOs. The first step in acquiring technical material is to establish an initial distribution requirement by submitting an AFTO Form 187, ***Technical Order Publication Request***. When applicable technical data is not available to support a new workload, the Production Planning Team will initiate an AFTO Form 187 and forward to the, Support Branch (OO-ALC/TIPT) for processing.

5. SOFTWARE PUBLICATION REQUIREMENTS. TOs with limited distribution are controlled by the TO manager for the weapon system or commodity manager. Approval from the USAF Technical Order System Section (OC-ALC/TILUB) is required when requesting changes that affect reproduction rights, reproduction cost, TO use when limited, and special access programs (e.g., B-2 aircraft TOs). Changes may be requested in writing and must identify the TO number, the Publication Stock Number for the TO, TODO and TM account numbers, and using organization's address. Additional information may be found in TO 00-5-16, *Software Manual USAF Computer Program Identification for Numbering (CPIN) System*, and TO-00-5-2, paragraph 4.7.

6. CONTROL OF TO FILES.

6.1. Limited TO files containing technical publications will be established as specified in TO 00-5-1 and TO 00-5-2.

6.2. All TOs will be signed out when removed from the file area (area is defined as within ten feet from the file). When a TO is temporarily removed from the file, an AF Form 614, ***Charge Out Record***, will be put in place of the TO. This pink sign-out sheet lists who took the technical data. When data is returned, the person returning the data will line through their name on the AF Form 614, return the TO to its appropriate place in the file and put the AF Form 614 in an envelope or container designed for that purpose at the front of the file.

6.3. TOs checked out will be returned as requested by the file custodian (not to exceed five working days).

6.3.1. Employees with overdue TOs will be notified by the Contractor's Quality Assurance Personnel (QAP) to return the TO immediately. Once notified, the employee will have 24 hours to return overdue TOs to the appropriate library.

6.3.2. If an overdue TO is not returned within five workdays after notification, a second notification will be sent to the borrower's division chief. The assigned QAP will periodically follow up on all actions until resolved.

7. DISPOSITION. TOs marked "Unlimited Distribution" can be disposed of in recycle or regular trash receptacles as a whole document. If the TO has a distribution limitation statement, it should be disposed of in one of the following methods: Recycle by placing different parts of the manual in separate recycling bins; tear in three or more pieces; shred and place in one bin; or send to the Wasatch Energy Systems facility for burning. Arrangements for burning may be made through the Records Management Office (75CS/SCSR). Additional information on TO disposition may be found in TO 00-5-2, Chapter 3-15. If the document is classified, destroy in accordance with DOD 5200.1R, *Information Security Program* and AFI 31-401, *Information Security Program Management*. CD-ROMs will have both surfaces scratched before recycling.

8. MAINTAINING TO FILES. Each library must keep binders in numerical and/or alphabetical sequence. The unit TODO will provide a computer system with a CD-ROM to be used with the Index CD and technical data CDs. CD-ROMs are filed in numerical sequence in MICROFORM pockets, one CD per pocket. A blank pocket will be left between CDs. The MICROFORM holders are kept in a three-ring binder, properly labeled and in proper numerical and/or alphabetical sequence at the beginning of the file. Shop worn pages will be replaced. Binders in bad condition will be replaced. Binders containing TOs are filed in numerical and/or alphabetical sequence and identified with a label.

8.1. Filing of Technical Material. All technical material will be filed within a maximum of seven workdays from the date of receipt by the TODO. Exceptions are: Interim TOs, urgent action TCTOs, safety supplements and interim safety supplements. These will be filed within 24 hours after being received.

8.2. Routine Checks. Routine checks will be conducted by the TODO. These checks will consist of a comparison between the TO index and the library requirement sheet. Routine checks will be accomplished no later than 30 working days following receipt of a new CD index or quarterly if received electronically. If the result of a routine check requires a change in the TO file, all of the labels on affected binders should be updated. Routine checks will be annotated on AFTO Form 131, *Technical Order Index Routine and Annual Check*.

8.3. Annual Inventory. Annual inventories will be conducted by the TODO. Annual inventories will consist of checking Part II of the TO index and Part III of the Automated Technical Order Management System, (ATOMS). Annual inventories will be annotated on AFTO Form 131.

8.4. Annual Page-by-Page Check. Annual page-by-page checks will be conducted by the TODO. Page-by-page checks are a comparison of the page and change numbers on each page of a TO with the data on the "A" page. These checks are mandatory when changes and revisions to paper TOs are posted. When TOs are posted, all pages in the TO must be checked against the "A" page.

The date of the “A” page check, the date and reviewer’s control number as well as any discrepancies (missing pages, improper printing, etc.) will be annotated on the title page or “A” page. “A” page checks performed during posting of a TO satisfy the requirement for the annual page-by-page check (Ref TO 00-5-2, paragraph 3-14.4).

9. LOCALLY PRINTED COPIES OF TO EXTRACTS. Locally printed TO extracts may only be used for 30 working days. To ensure configuration control, all locally printed copies of TO extracts will be stamped with the reproduction date, the parent TO date and change number. Outdated extracts must be disposed of in accordance with (IAW) paragraph 7 of this publication.

10. AF FORMS 202, NONCONFORMING TECHNICAL ASSISTANCE REQUEST AND REPLY.

10.1. Purpose of AFMC Form 202. To furnish technical data and address procedures or conditions beyond TO authority that may or may not result in work stoppage. This covers three main areas: incorrect technical guidance or engineering documentation; one-time parts and/or process substitutions; and conditions where TO procedures do not exist. It can provide engineering authorization for: the restoration of damaged or worn parts; substitution of parts, materials, or processes; the use of support equipment, special tools, test equipment, fixtures, and ground handling equipment; “use-as-is” determinations. The AFMC Form 202 is NOT a substitute for the normal TO change process, but rather should work in concert with it. Further clarification may be obtained in AFMCMAN 21-1.

10.1.1. It is inappropriate to use the AFMC Form 202 for the following:

10.1.1.1. Documented changes to test equipment, processes, or procedures.

10.1.1.2. A substitute for data originally NOT procured (or inadequate when delivered).

10.1.1.3. Non-standard test equipment, commercial off the shelf (COTS) items.

10.1.1.4. A substitute for poor System Program Manager (SPM) response to AFTO Form 22.

10.1.2. AFMC Forms 202 will also be issued when a one-of-a kind problem has not been cleared by the rescission date and the situation is not expected to be a repetitive problem.

10.1.2.1. When information in the AFMC Form 202 becomes a repeat requirement, the information shall be incorporated into the applicable TO or drawing by submitting a publication change request or engineering order to the responsible engineer or equipment specialist. In this case the AFMC Form 202 will not be used as:

10.1.2.1.1. An interim TO.

10.1.2.1.2. Authorization for part substitution (except for critical part needed to prevent maintenance or modification work stoppage).

10.1.2.1.3. A change to TCTO intent, extend rescission, reinstatement.

10.1.2.1.4. Substitute for formal tech data change process.

10.2. These instructions are authorized for use only until the reported deficiency is corrected, or for a maximum of 120 days.

10.3. Depot maintenance activities must follow systems engineering or configuration management processes during modifications and repairs using an AFMC Form 252, ***TO Publication Change Request***.

10.4. Automated AFMC Form 202 Electronic Tracking System. All center activities will use the automated electronic tracking system managed by the Technology and Industrial Support Directorate (OO-ALC/TI) for transmittal and response to AFMC Form 202 requests. This system may be accessed at the following internet address URL: <http://ooport.hill.af.mil:7777>. User IDs and passwords are issued by Logistics Center Information Division (OO-ALC/LGN).

11. RESPONSIBILITIES.

11.1. TODO Site Manager.

11.1.1. Focal point for the receipt and distribution of all publication software encompassed by the Air Force Technical Order System and Federal Supply Catalogs.

11.1.2. Acquires and maintains a copy of the current code selected reconciliation list (CSRL) for TOs and CPINs from Oklahoma Air Logistics Center (OC-ALC).

11.1.3. Ensures the timely distribution of all TOs.

11.1.3.1. Routine TO changes and supplement will be distributed within two working days after receipt.

11.1.3.2. Safety, urgent and immediate TOs will be distributed immediately.

11.1.4. Prepares a daily distribution list of all TOs and supplements received and distributes them accordingly no later than 0900 hrs the following day. The list will contain the TO number, date, short title, type of TO, and TO file number.

11.1.5. Ensures the timely posting of all TO changes.

11.1.6. Conduct periodic audits of TO files to ensure timely and accurate posting of technical data, proper sign in/out procedures, and accuracy of AFTO Forms 110, ***Technical Order/CPIN/Distribution Record*** (Ref: paragraphs 8.3, 8.4, and 8.5 of this publication).

11.1.7. Ensures all Contractor personnel complete the Air Force Technical Order System (General) Course, J6ANU000066-038.

11.1.7.1. Training must be documented on AF Form 797, ***Job Qualification Standard/Continuation/Command JQS***.

11.1.7.2. New employees will be required to receive 30 days of on-the-job training (OJT) prior to being assigned TO library responsibilities.

11.2. Using Organizations.

11.2.1. Appoint a lead TO Monitor and alternate to represent the organization in all matters pertaining to TOs. The appointment of the TO Monitor must be submitted in writing to the assigned TODO and must include name, office symbol and duty phone.

11.2.2. Appoint subordinate TO Monitors and alternates for TO files within their organization.

11.2.3. Ensure that TO Monitors receive formal TO File Monitor training.

11.2.4. Provide a list of personnel authorized to certify TO requirements and submit requests for TOs, CPINs, or Defense Supply Catalogs. The list of certifying officials must be submitted in writing to the TODO and must include name, grade, security clearance, office symbol, and duty phone.

11.2.5. Perform core inspections on TOs used in their organizations as part of their internal quality assurance program. Core inspections will be performed IAW AFMCI 21-115, *Depot Maintenance Quality Assurance*, utilizing Material Standardization and Evaluation Program (MSEP) criteria contained in the standardized checklist.

11.2.5.1. The number of TOs inspected will be based on statistical sampling techniques. TIPT will assist the product directorate in establishing the sampling plan.

11.2.5.2. Deficiencies discovered during core inspections will be documented on an AFMC Form 343, ***Quality Assurance Assessment***, and will be routed to the TODO for corrective action.

11.2.5.3. The results of product directorate core inspections will be reported to the Center Quality Assurance Division (OO-ALC/LGQ) monthly for inclusion in the quality performance indicators as prescribed in AFMCI 21-132, *Depot Maintenance Technical Compliance Review Procedures*.

11.2.5.4. Establish and maintain internal controls to ensure TO extracts are stamped with the reproduction date, parent TO date and change number.

11.3. Unit TO Monitors.

11.3.1. Review TO numerical indexes, compendiums and lists for publication software required by their activities.

11.3.2. Control assigned files.

11.3.3. Ensure the TODO is notified of broken binders and worn and missing page.

11.3.4. Notify OO-ALC/TIP, QAP, when the contractor non-performs or is suspected of non-performing.

11.3.5. Review TO indexes, compendiums, and lists to ensure that ordering of multiple files is kept to an absolute minimum.

11.3.6. Ensure TOs are properly signed out when removed from the file area.

11.3.7. Submit an AFTO Form 187 to the TODO when requesting TO additions or deletions.

11.4. Unit Certifying Officials.

11.4.1. Certify the correctness and need of publications requested.

11.4.2. Annually review assigned files.

11.4.2.1. Obtain a list of all assigned TOs from the TODO.

11.4.2.2. Review the list for accuracy.

11.4.2.3. Take necessary action to delete unneeded excess publications, request additional and/or new publications.

11.4.2.4. Submit a written request to maintain rescinded and/or obsolete TOs on file. This request will be forwarded to the Plant Management Division (OO-ALC/TIP) TODO, once justified and signed out by the product director.

11.4.2.4.1. Ensure that all obsolete and rescinded copies are placed in a file separate from active TOs.

11.4.2.4.2. Ensure that the TO binder and title page are conspicuously marked “Rescinded or Obsolete”.

11.5. Functional Director (FD)/Functional Commander (FC) (OO-ALC/TI).

11.5.1. Manage the quality surveillance program through assigned QAPs.

11.5.2. Assign competent and capable functional experts to satisfy surveillance requirements.

11.5.3. Ensures Quality Assurance (QA) personnel are appointed, in writing, and trained prior to assuming responsibility.

11.5.4. Forward written appointment to the contracting officer.

11.6. OO-ALC/TIP. Responsible for the administration of the TODO program in accordance with the statement of work (SOW), appropriate directives, and established policies.

11.7. OO-ALC/TIP QAP.

11.7.1. Implement the TODO program in accordance with the SOW, appropriate directives and established policies.

11.7.2. Develop and implement a monthly surveillance schedule based on statistical sampling techniques that identify the items to be inspected in accordance with the criteria established in the quality assurance surveillance program.

11.7.3. Assist product directorate quality assurance organizations in the development of a TO surveillance program based on statistical sampling techniques that identify the TOs to be inspected using the standardized checklist.

11.7.4. Review and analyze monthly surveillance results for negative trends. Determine and implement corrective action.

11.7.5. Investigate and resolve customer complaints.

11.8. Contract Functional Manager (Plant Management Division Chief).

11.8.1. Manage the quality surveillance program through assigned QAP.

11.8.2. Conduct performance evaluation meetings with the contractor at a minimum monthly or as required.

11.8.3. Monitor the daily TODO requirements to ensure that effective support is provided. Resolve unacceptable conditions through process improvements, contract revisions and/or contract enforcement.

11.8.4. Ensure all quality assurance personnel receive formal TO and quality assurance training.

11.8.5. Establish a customer service program.

11.8.6. Develop metrics to track contractor performance.

11.8.7. Present surveillance results and contractor performance metrics to the FD/FC at the monthly workload review meeting.

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Attachment:
Glossary of References and Supporting Information

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

TO 00-5-1, *AF Technical Order System*
TO 00-5-2, *Technical Order Distribution System*
TO 00-5-16, *Software Manual USAF Computer Program Identification for Numbering (CPIN) System*
TO 00-20-5, *Aerospace Vehicle Inspection and Documentation*
TO 00-25-195, *Source, Maintenance and Recoverability Coding of Air Force Weapons Systems and Equipment*
TO 00-5-16, *Software Manual USAF Computer Program Identification for Numbering (CPIN) System*
AFPD 21-1, *Managing Aerospace Equipment Maintenance*
AFPD 21-3, *Technical Orders*
AFI 21-102, *Depot Maintenance Management*
AFI 31-401, *Information Security Program Management*
AFI 63-124, *Performance-Based Service Contracts (PBSC)*
AFMCMAN 21-1, *Air Force Material Command Technical Order System Process*
AFMCI 21-110, *Depot Maintenance Technical data Word Control Documents*
AFMCI 21-115, *Depot Maintenance Quality Assurance Program*
AFMCI 21-132, *Depot Maintenance Technical Compliance Review Procedures*
AFMCI 21-301, *Air Force Material Command Technical Order System Implementing Policies*
DOD 5200.1R, *Information Security Program*

Abbreviations and Acronyms

ATOMS – Automated Technical Order Management System
CFM – Contract Functional Manager
COTS – Commercial Off the Shelf
CPIN – Computer Program Identification for Numbering
CPCI – Computer Program Configuration Items
CSRL – Code Selected Reconciliation List
ECS – Embedded Computer Systems
EDR – Engineering Data Repository
FC – Functional Commander
FD – Functional Director
MEA – Maintenance Engineering Activity
MPA – Maintenance Production Activity

MQAA – Maintenance Quality Assurance Activity
MSEP – Material Standardization and Evaluation Program
OC-ALC – Oklahoma Air Logistics Center
OJT – On-the-job training
OO-ALC – Ogden Air Logistics Center
OO-ALC/LGN – Information Division
OO-ALC/TI – Technical and Industrial Support Directorate
OO-ALC/TIPT - Support Branch
SOW – Statement of Work
QAP – Quality Assurance Personnel
QAS – Quality Assurance Specialist
QASP – Quality Assurance Surveillance Plan
SM – Single Manager
SPD – System Program Director
SPM – System Program Manager
TODO – Technical Order Distribution Office
TCTO – Time Compliance Technical Orders
TO – Technical Order

Terms

Abbreviated Technical Data. A breakout listing of step-by-step tasks for a single operation, authorized by the cognizant engineering authority. It includes Job Guides and TO checklists. When abbreviated technical data is in use at the job site, the complete TO must be readily available for reference. Abbreviated technical data is designed to complement technical data not replace it.

Automated Technical Order Management System (ATOMS). The ATOMS is a database program. It incorporates the function of *AFTO Form 110* and *AFTO Form 131*. The TODO uses ATOMS instead of manual processes for TO account records, maintenance and generation of TO publication requests.

Compendiums. Indexes for Embedded Computer Systems (ECS) software Compendiums identify Computer Program Configuration Items (CPCI) pertaining to the specific weapon systems, equipment systems or commands.

Contract Functional Manager (CFM). Responsible for surveillance of contractor performance in accordance with the requirements outlined in the performance statement of work and QASP.

Engineering Drawings. Engineering drawings/detailed blueprints are created and approved by cognizant engineering organization. They are commonly required to perform depot level manufacture, assembly, repair and modification of equipment requiring strict compliance to maintain configuration control.

Functional Director/Functional Commander (FD/FC). Responsible for all matters related to the management and control of TOs. This duty can not be delegated.

Informal Technical Data. Note, manuals and drawings that are not an official part of the TO system, or uncontrolled copies or pages of formal TOs.

Process Orders. Written process used where needed to describe specific applications, procedures techniques, methods and shop practices to complement technical data.

Quality Assurance Personnel (QAP). Highly qualified personnel with significant TO experience responsible for the development, planning and implementation of the quality surveillance plan and the SOW.

Quality Assurance Specialists (QAS). Personnel designated by the product directorate quality organizations to accomplish assessment/inspections of various products, processes and/or procedures.

Technical Data. The only authorized source of information that can be used to perform depot maintenance or locally developed instructions to accomplish technical requirements.

TO Indexes. Provides the status of all TOs and a means of selecting needed TOs.

Work Control Document. The official record of work performed. This document summarizes the steps and TO references required to complete a task by a certified technician.